

ABSTRACT

A high-voltage transmission cable having a carbon fiber core. The outer conductor is aluminum. The carbon core is enshrouded in a sheath that prevents the formation of a galvanic cell at the aluminum-carbon interface and provides a slip plane between the carbon core and outer conductor. The high-voltage transmission cable has insignificant sag, is operable at greater ampacity and greater temperature than conventional ACSR cable of comparable size, and is a cost-effective replacement for conventional ACSR cables. Use of the high-voltage transmission cable allows greater volume of power to be distributed over the existing power transmission grid.